What is claimed is:

1. A vertical MOSFET comprising:

a substrate of a first conductivity type;

a channel region of a second conductivity type diffused into the substrate;

a gate disposed at least partially over the channel region;

a source region of a first conductivity type disposed proximate to the gate and adjacent to the channel region; wherein

the channel region includes a depletion implant area proximate to the gate, the depletion implant species being of the second conductivity type to reduce the concentration of the first conductivity type in the channel region without decreasing the conductivity in the drain region.

2. The vertical MOSFET as recited in claim 1, wherein the substrate includes:

a first region of the first conductivity type; and

a second region of the first conductivity type disposed on the first region and having a concentration of carriers which is less than the concentration of carriers of the first region.

3. A method for producing a vertical MOSFET, the method comprising:

applying a blanket implant of a first conductivity type to a substrate of a second conductivity type;

forming a gate on the substrate;

diffusing a channel region in the substrate proximate to the gate;

implanting a source region of the second conductivity type into the channel region; and

whereby the channel region includes a depletion implant area proximate to the gate, the depletion implant area being o the first conductivity type and having a concentration of carriers of the first conductivity type which is greater than the concentration of carriers in the rest of the channel region.

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